

## Malaysian Bearded Pigs.

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I have for examination a small series of Malaysian bearded pigs from the Bornean-Sumatran area: those from Borneo are *Sus barbatus*: pigs from Sumatra and Sumatran islands have been named, and determined as, *Sus oi*<sup>1</sup>: the latter series is not homogenous and it is open to anyone to say that the island animals are of the Bornean form—but a topo-type of *Sus oi* is still more like the latter than are the animals from the islets.

When Miller wrote his "Notes on Malayan Pigs"<sup>2</sup> he defined *Sus barbatus* of Borneo (after examining 27 skulls of adults) as having "the posterior molar, both above and below long, the upper tooth containing a compressed anterior median ridge, a middle median ridge, and a large terminal median heel in addition to two well-developed bicusped cross ridges, the lower tooth containing three large bicusped cross ridges and three smaller median ridges, the last of which forms the terminal heel."

Of *Sus oi* he wrote in the same article (nine specimens examined from E. Sumatra, Banka and Kundur Id: but only two adults with the last lower molar in good condition) "last molar both above and below smaller than in the Bornean animal, the upper tooth retaining all its elements, but with its posterior portion much narrowed, the lower tooth lacking the terminal heel, but with the third transverse ridge reduced to a terete heel-like remnant.

"This species is distinguishable from *Sus barbatus* chiefly by the reduced size and complexity of the posterior lower molar, as shown by the type and by one of Doctor Volz's Palembang specimens, the only adults yet known with this tooth in good condition. No tendency toward a similar reduction could be detected in any of the twenty-seven adults of *Sus barbatus* that I have examined. It is very probable that, as Doctor Jentink states, the skull is more elongated than in the Bornean animal."

In his key he summarises the differences as follows:—

"Third lower molar with three cross ridges and a terminal heel. . . . *Sus barbatus*."

<sup>1</sup> Miller, *Proc. Biol. Soc. Washington*, XV, 1902, pp. 51-2.

<sup>2</sup> *Proc. U. S. Nat. Mus.* XXX, 1906, pp. 737-758, pls. XXXIX-LXIV.

Third lower molar with two cross ridges and a terminal heel. . . . *Sus oi.*"

Of still larger series of Sumatran and Bornean material Lyon wrote<sup>3</sup> "The specimens indicate that the members of the *Sus barbatus* group of pigs are somewhat more variable than was at first supposed. The characters pointed out by Mr. Miller, however, appear as a rule to hold good. The most reliable character for distinguishing between *Sus oi* and *Sus barbatus* is the size and the shape of the last lower molars. This tooth averages longer in the Bornean pigs and in the majority of the specimens shows three distinct cross ridges and a terminal heel, while in the Sumatran *Sus oi* most specimens have this tooth shorter, with only two cross ridges and a terminal heel, or sometimes what appears like three cross ridges and no heel. As for actual size of the skulls, the largest in the U. S. National Museum comes from Borneo (Cat. No. 142351, upper length 487 mm.) It does not, however, reach the extreme length (505 mm.) given by Mr. Miller for *Sus oi*. All the pigs of this group recently taken by Doctor Abbott on Sumatra or the adjacent islands are distinctly smaller than is the type of *Sus oi*."

My Bornean series consists of five adult skulls with mandibles and one mandible from the southern half of Sarawak (one with exceedingly worn teeth, one just adult) which should all be *Sus barbatus*; and my Sumatran set<sup>4</sup> of a topotype of *Sus oi* and two adult skulls with mandibles and one skull only (with very worn teeth) from Tanjong Batu, south east of Great Durian Id., Rio Archipelago, which should also be *Sus oi*. To these may be added Miller's description combined with his figures of skulls and teeth which are very large and clear.

The Tanjong Batu examples agree with the topotype and the figures and descriptions of *Sus oi*—and so do three of the six Bornean specimens!

Of the remaining Bornean specimens two clearly have the mandibular teeth of *barbatus* of Miller, and another with the detail worn away has the teeth nearly as long; but of the last all one can say of its exceedingly worn teeth is that the posterior lower molar is very large and apparently has the form of *barbatus* though it is abnormal, ending with a pronounced outward curving spur, whereas the last lower molar in all the others is rounded. Its posterior upper molar is truncate and terminates squarely: the remainder agree with each other in having the end of the last upper molar rounded.

<sup>3</sup> *Proc. U. S. Nat. Mus.* XXXIV. 1908, p 626.

<sup>4</sup> Lent by Raffles Museum, Singapore.

Recent writers on Bornean pigs have agreed that *S. longirostris*, Nehring, is only a synonym of *S. barbatus* which Miller says is a large-toothed animal. Is there another pig in Borneo (besides *S. barbatus* and *S. gargantua*): or is the last molar in the Bearded Pig as variable as it is in some species of *Presbytis*—as variable as many of the characters of the skull? This latter supposition seems more likely.

As far as the teeth go I am unable to separate my material into two forms but there appear to be other characters by which it may be possible to maintain the Sumatran animal as a slightly differentiated subspecies.

As compared with *S. b. barbatus* it has the muzzle (front of *pmx* to anterior alveolus of canine) longer—and perhaps a little broader; the mandibular symphysis longer; the mandible a little deeper; while the profile of the face is perhaps a little more concave. And though fewer Sumatran than Bornean animals have been measured *S. b. oi* also appears to be a little larger. The maximum upper length of skull in the U. S. National Museum series is 490 mm. for *barbatus* (27 specimens): 505 for *oi*. My series shows 480 for *barbatus*: 520 for *oi* (from Tanjong Batu).

What is *Sus gargantua* Miller<sup>5</sup>, a name based on a very large skull from S. E. Borneo (the type locality of *Sus barbatus*)? Its molars in no way differ from those of *barbatus* and *oi*, the unique skull possessing a posterior lower molar with three bicuspid ridges and a terminal heel.

Its distinctness rests on the size and shape of the skull and while, though adult, it is only a young adult yet the upper length of the skull measures some 570 mm. (22½ in.) against 490 (19½ in.) in *S. barbatus* and 520 (20½ in.) in *Sus oi*. As for the shape of the skull it differs from that usual in the others principally in having that part of the cranium lying behind the orbits pushed backwards and downwards so that it is more prolonged posteriorly and not so high there, the bottom of the condyles being scarcely above the alvcolar line of the cheek teeth; while lines drawn through the lower edge of the zygomata and of the alveolus are either paralleled or, if produced, meet posteriorly whereas the same lines produced in *barbatus* and *oi* always seem to meet anteriorly.

In spite of the skull being larger than the known skulls of the others the teeth do not exceed theirs in size.

If the type of *S. gargantua* is not an example of *barbatus* of abnormal shape and size (and there is no reason to believe that it is) it must be a distinct species since *gargantua* and *barbatus* occur side by side. Perhaps marked external differences will later be found.

<sup>5</sup> Miller, *t. c.* p. 743 and plates.

In this connection it is interesting to note that the Malays inhabiting the central parts of Eastern Sumatra and some of the islands closely adjacent report the existence there of another pig much larger than *Sus b. oi* and regarded by them as quite distinct from it—the “Babi branti”—in habits nomadic and consorting in droves<sup>6</sup>. There is no reason to doubt the statements which indicate a Sumatran analogue to the Bornean *Sus gargantua*, thus paralleling the case of *oi* and *barbatus*.

Excluding—their position being uncertain—*Sus gargantua* of South-eastern Borneo, of huge size, and *Sus branti* of Eastern Sumatra, breast high at the shoulders and decreasing towards the rump, it appears to me that there are only three real species of pig in the Malaysian sub-region (not including the Philippine Islands and Celebes): these are *Sus scrofa* (to which belong *S. cristatus*, *S. vittatus* and all the “species” or forms of common wild swine that have been described from the area<sup>7</sup>), *Sus barbatus* of Borneo and Sumatra and *Sus verrucosus* of Java.

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<sup>6</sup> This huge pig, whether of Borneo or Sumatra, must be a fine animal and is probably so powerful and fierce as to provide excellent sport. It is to be hoped that the first man so fortunate as to obtain good adult specimens will not content himself with taking merely the skull and scalp but will preserve the whole skin and skeleton.

<sup>7</sup> Also *S. leucomystax* of Japan.